

Patent claims

1. Computer tomography (1) with an x-ray radiator (2) rotatable around a system axis (Z), with an x-ray detector (5) and with a radiator-side gating device (3) that comprises two opposite absorber elements (30, 31) that can be adjusted in a straight line, in particular that can be adjusted with regard to their separation from one another, for variable delimitation of the ray beam,  
characterized in that  
the absorber elements (30, 31) exhibit a curved shape, and that the gating device (3) comprises an adjustment device that acts on the absorber elements (30, 31) such that the absorber elements (30, 31) can be moved perpendicular to their longitudinal direction, in particular in a direction parallel to the system axis (Z).
2. Computer tomography apparatus (1) according to claim 1,  
characterized in that  
the absorber elements (30, 31) can move independent of one another.
3. Computer tomography apparatus (1) according to claim 1 or 2,  
characterized in that  
the adjustment device for each of the absorber elements (30, 31) comprises a separate adjustment means (60, 61).
4. Computer tomography apparatus (1) according to claim 3,  
characterized in that  
the adjustment means (60, 61) are fashioned for a linear movement of the appertaining absorber element (30, 31).
5. Computer tomography apparatus (1) according to claim 3 or 4,  
characterized in that  
the adjustment means (60, 61) comprise a (preferably mutual) linear guide (65) and respectively one drive means (62, 67) acting on the absorber elements (30, 31).

6. Computer tomography apparatus (1) according to claim 3 or 4,  
characterized in that  
the adjustment means (60, 61) respectively comprise a linear motor (71, 72).

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7. Computer tomography apparatus (1) according to any of the claims 1  
through 6,  
characterized in that  
the curvature of the absorber elements (30, 31) runs in a plane perpendicular to the  
10 system axis (Z).

8. Computer tomography apparatus (1) according to any of the claims 1  
through 7,  
characterized in that  
15 the curvature exhibits the shape of a circular arc whose middle point lies (in the  
focus (F) of the x-ray radiator (2).

9. Computer tomography apparatus (1) according to any of the claims 1  
through 8,  
20 characterized in that  
the curvature radii of the absorber elements (30, 31) differ from one another by a  
value of 0.5 % to 10 % from the interval.

10. Method for operation of a computer tomography apparatus (1) according to  
25 any of the claims 1 through 9, in which an examination subject is scanned under  
rotation of the x-ray radiator (2) and by means of a translatory relative movement  
between the x-ray radiator (2) and the examination subject in the direction of the  
system axis (Z), whereby to prevent an unnecessary radiation exposure for the  
examination subject, the gating device (3) is operated with absorber elements (30,  
30 31) opened to different widths with regard to a center beam of the viewing field of  
the x-ray detector (3).

11. Method according to claim 10, in which one of the absorber elements (30, 31) is positioned in a closed position and the other absorber element (30, 31) is positioned in an open position before the beginning and/or after the end of the scanning movement, in particular the relative movement.  
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12. Method according to claim 11, whereby the absorber element (30, 31) located in the closed position is opened in synchronization with the scan movement, in particular with the relative movement, after the beginning of the scan movement, in particular the relative movement.  
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13. Method according to claim 11 or 12, whereby one of the absorber elements (30, 31) located in the open position is closed in synchronization with the scan movement, in particular with the relative movement, before the end of the scan movement, in particular the relative movement.  
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